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FIG. 39. J. R. Brown in the garden of the
late Dr. A. D. Houghton.



CACTUS AND SUCCULENT JOURNAL

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PRESIDENT'S MESSAGE

Appointments of Deputy Regional Vice-Presidents have now been made. For the duties of both the R. V. P. and the D. R. V. P., and of how they can help you, please refer to the President's Message in your April '42, JOURNAL. Following is a complete list of appointments arranged in the various districts. The first name after the District is the R. V. P. for that district, then follow the Deputies:

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AMATEUR BULLETIN

The new AMATEUR BULLETIN will be published separately from the CACTUS JOURNAL by popular vote. There will be twelve undated issues during the year for \$1.00. Numbers 1 and 2 are in production, number 3 has been mailed, and number 4 is being mailed May 20. The current issue discusses *Echinopsis* in the same manner as the *Cephalocereus* article in the last issue. Mildred Orpet also has a very interesting illustrated article on Succulents. If you have not already done so mail \$1 for the issues in 1942 to Box 101, Pasadena, Calif. Foreign \$1.25. (Not sold separately nor through dealers.)

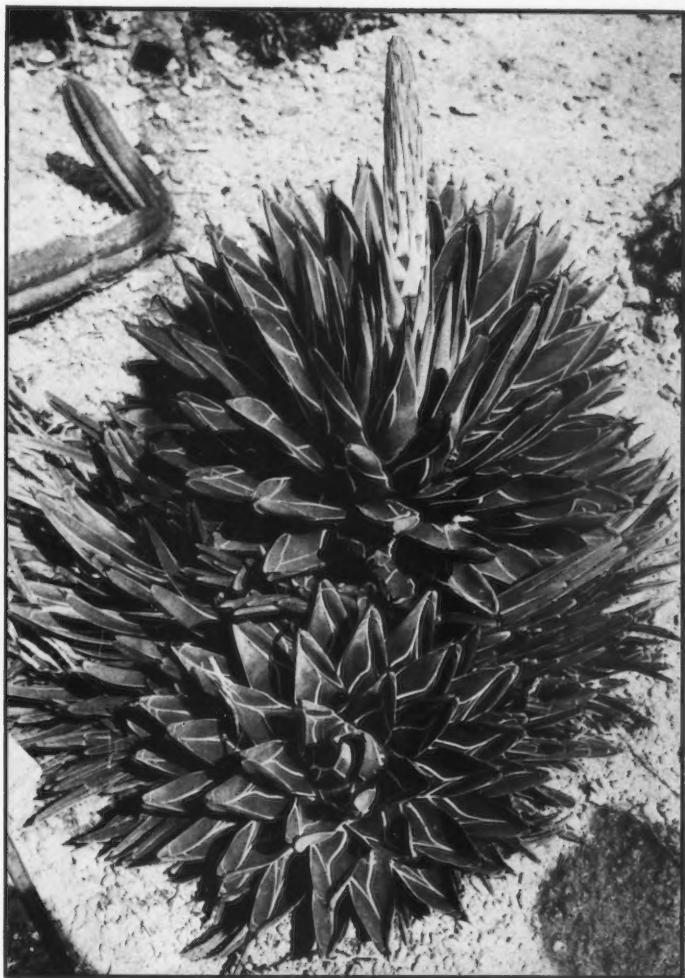


FIG. 40. *Agave Victoriae-Reginae* T. Moore seldom has suckers, while *A. Ferdinand-Regis* Berger (pictured here) offsets freely.

A Majestic Plant Named to Honor a Majestic Queen

By WILLIAM HERTRICH, *Curator*
Huntington Botanical Gardens

The first plant named in honor of Queen Victoria of England was a giant water lily with leaves six feet in diameter. It was in 1837 when Dr. Lindley described this queen of all aquatics (which was first discovered by Haenke in 1801) as *Victoriae Reginae*. It was a fitting tribute to

the young Queen, and thirty-six years later, in 1875, one of the editors of the "Gardeners' Chronicle" formally described another plant in honor of Queen Victoria—this time an Agave, which was named *Agave Victoriae-Reginae*.

This most interesting Agave was first intro-

duced in Paris in 1872 by a Mr. V. Considerand who exhibited a single specimen as a new, unidentified species. It was awarded the large silver medal in the same year at the Paris Horticultural Exposition. As the report goes, the plant decayed the following winter due to excessive moisture but Mr. Considerand was able to import twelve additional plants of the same species in the fall of 1874. These were disposed of in the following manner:

The largest specimen was given to the Jardin des Plantes in Paris; seven were sold to Mr. M. L. de Smet of Ghent, Belgium; one was acquired by a Frenchman who was an enthusiastic Agave collector, while the remaining three plants were kept by Considerand.

In September, 1875, de Smet sent the largest of his seven specimens to the International Exhibition at Cologne, Germany, labeling it *Agave nov. spec.* It was there viewed by J. T. Peacock, Esq., of Sudbury House, Hammersmith, as well as by many other plant lovers. Peacock was greatly interested in agaves and acquired all seven specimens from de Smet. At the October meeting of the Floral Committee of the Royal Horticultural Society, he displayed the largest specimen, where it was awarded a first class certificate and recommended for the gold medal. With this award and recommendation to his credit, Mr. Peacock received permission from Her Majesty, the Queen, to name and publish this new species as *Agave Victoriae-Reginae*. A formal description of this plant by Thomas Moore, one of the editors of the "Gardeners' Chronicle," appeared in the October 16th issue of that magazine, in the year 1875, and was accompanied by a woodcut. The publication of this description aroused the ire of Mr. Carriere, editor of the French journal "Revue Horticole" and in the very next issue he gave the history of its introduction by Considerand. After all it seemed fair enough to give credit where it rightly belonged. However, he ignored the published name of *Agave Victoriae-Reginae* (which was, to say the least, a painful situation for the English) and published it as *Agave Consideranti* ("Revue Horticole" p. 401, 1878). This second name, however, was barred by the international botanical rules of priority rights. Thomas Moore then explained that in his opinion it was de Smet who was responsible for introducing the plant to European plant lovers.

Dr. Edward Palmer, the American botanical collector, gathered fruiting specimens of this Agave in Mexico, its native habitat, and in February of 1880, sent them to St. Louis, Missouri. The largest specimen had a diameter of two feet, was fourteen inches high, and carried about

250 leaves, seven to eight inches long by two to two and a half inches wide. Dr. George Engelmann, the renowned botanist of the Missouri Botanical Garden, remarked that the great morphological interest of this plant (at least in the specimen he examined) consisted in its regular tri-flowered bunches, the third flower occupying the central position between the two normal twin flowers.

To the Paris International Exposition of 1900, the Mexican Government sent a collection of native plants, among them a very beautiful Agave, closely related to *Agave Victoriae-Reginae*. At the termination of the Exposition a nurseryman named Nabonnard procured this plant, from whom, in turn, Alwin Berger acquired it. Mr. Berger was then curator of Sir Thomas Hanbury's famous garden, "La Mortola" at Ventimiglia, Italy, and was much impressed with this specimen. After a careful examination he came to the conclusion that there were sufficient differences between this species and *Agave Victoriae-Reginae* to warrant giving it specific rank. Not to be outdone by Thomas Moore in selecting a proper name for this newly discovered plant, he described and named it in honor of His Majesty, King Ferdinand of Bulgaria, *Agave Ferdinandi-Regis*.

Both species are represented in the collection at the Huntington Botanical Gardens where they have flowered and produced fruit at various times. They are very much alike in size and shape of body as well as in flowering shafts and arrangement of flowers; in fact so similar are they that it is doubtful as to whether *A. Ferdinandi-Regis* warrants specific rank. Experience in their cultivation at the Gardens has demonstrated the fact that they reach their maturity and flower when they are between eight and twelve years old, depending somewhat upon their cultural conditions. However, records indicate that when grown indoors in pots as is generally done in European countries (where climatic conditions prevent outdoor cultivation) it is at least twenty years before they reach maturity and produce flowers and fruit. The native habitat of both species is Mexico, in the vicinity of Monterey.

BOOK LIST

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FIG. 41

Echinofossulocactus or Stenocactus

By DR. LEON CROIZAT

EDITOR'S NOTE: We will receive from Dr. Croizat several articles on naming cacti. Dr. Croizat has worked with cacti and the other succulents for many years and is well fitted for this work because of his botanical and law training. Then too, one must be at a source of reference material and have a complete understanding of languages, Latin, Greek, German and French. Having all these requisites, the author, we know, will furnish all serious students with many enlightening facts that must be applied until we have clarified our too complicated system of naming cacti and the other succulents.

Since the truth can never hurt, I will frankly state as an introduction that many of the names tagged to the Cactaceae are neither well chosen nor well given. Many authors who busy themselves with this family do not seem to be aware of the fact that plants cannot be named at random. It stands to reason that since botany is a science, or a game, in which hundreds of thousands of plants are known by hundreds of thousands of names, there must be some rules to tell everybody what can, and what cannot be done. We have plenty of rules for guidance when we play with fifty-two cards or with twenty-four checkers, and should expect to have rules as a guide when we play with countless plants.

The regulations that prescribe what can be done and what cannot be done in the naming of plants are called the *International Rules of Botanical Nomenclature*. They consist of about seventy-four so-called Articles and forty-nine so-called Recommendations, written in English, French and German. The first truly international

set of Rules of Nomenclature was discussed and voted upon during the Botanical Congress of Vienna in 1905. Later, at Bruxelles in 1910, at Cambridge in 1930, and at Amsterdam in 1935, the Rules were discussed and revised in the light of the services which they had given or failed to give. Today, botanists throughout the world abide by the so-called Amsterdam Code of 1935, because the Congress scheduled for 1940 in Stockholm could not be held.

It is at least as easy to understand and to digest the Rules of Botanical Nomenclature as it is to master the intricacies of auction bridge, chess and the like. Anybody who can play cards can apply the Rules well. There is no excuse for erring unless in very involved cases, and it is wise to do things according to the Rules because those who write names or make decisions contrary to the Rules are the losers in botany: what they do goes to the synonymy, and there it stays. The synonymy, by the way, is the collection of sundry bad names which trail good ones.

In this short discussion I shall review an issue of nomenclature which has recently been brought to my attention by a correspondent who works below the Rio Grande. Driven to despair by seeing the same plants called by some *Echinofossulocactus* and by others *Stenocactus*, this correspondent wrote: "Will you be so kind as to take in hand your big books and let me know what I must do? Shall I label these plants with the name *Echinofossulocactus*, which is very

awkward, or treat them as *Stenocactus* which sounds better?"

I looked up the matter in sundry big and small books, the Rules being the smallest of them all. Here is the answer:

It is always possible to speak about anything in such a way as to have everybody understand nothing. Somebody may refer to a "sesquipedalian manifestation of teratology," and somebody else may plainly speak of a "big monster," both meaning the same thing. Keeping this well in mind, before speaking of ranks, transfers, priority and the like, I will state a few generalities about the Rules in everyday language.

It is well known that a suit of cards consists of ace, king, queen, jack, ten and so forth. Botanical names, too, are arranged in suits: first after the largest units comes the order, next the suborder, then the family, the sub-family, the tribe, the subtribe, the genus, the subgenus and so forth (see Art. 12 of the Amsterdam Code). These names are called *categories* or *ranks*, that is, a genus of the Cactaceae is a match for a genus of the Asclepiadaceae, and a tribe of the Euphorbiaceae is a match for a tribe of the Geraniaceae even as a queen of diamonds is a match for a queen of spades, and so forth.

The Rules order (Art. 54) that when a specific name is transferred without change of rank the oldest valid name must be retained, or re-established if it has not been retained. This sounds involved but it is not so: let us suppose that John Doe has named a certain plant *Buzzocactus dilettans* in 1890 in a manner which conforms with the Rules. This name is good, of course. Then, Jim Toe comes along in 1899 and decides that John Doe was hopelessly befuddled, and that his *Buzzocactus* should be placed under the genus *Bumblebeus*. Jim Toe, according to the Rules *must* keep up the name of the species as *dilettans* and thus publish *Bumblebeus dilettans* (J. Doe) J. Toe. He cannot discard the name *dilettans*. So, if this plant from *Buzzocactus* goes to *Bumblebeus*, then to *Incubus* then to *Succubus*, its specific name always remains *dilettans*.

The case is *quite different*—be this carefully noticed—when the rank is changed. Let us once again suppose that John Doe published *Buzzocactus dilettans* var. *infaustissimus*, and that ten years later Jim Toe decided that, as usual, John Doe understood nothing at all, and that this variety, on the contrary, is a perfectly good species. Jim Toe can take John Doe's plant, and make of it *Buzzocactus infaustissimus* (J. Doe) J. Toe, or he can call the new species any odd way he chooses, *Buzzocactus ludicrus* J. Toe, for instance. In other words: so long as the face-

value of the cards is the same, the name must remain the same, passing from king to king or from queen to queen without end. But, the moment the face-value of the cards is not the same, the name *may not* remain the same and may change as it jumps from a queen to a king. This is indeed very simple.

A second point worth noticing is that when a good name already exists for a certain plant, this plant cannot be renamed. Thus, let us suppose that in 1890 John Doe has published according to the Rules *Buzzocactus dilettans*. Jim Toe may like this name or not, that does not mean a thing—he, too, must retain this name and he cannot, let us say, try to have *Buzzocactus dilettans*, published in 1890, displaced by *Bumblebeus audacissimus* (a name coined) in 1900. In the same manner, a checker does not come to nestle on the same square of the board where another checker is already snugly ensconced.

A third point remains which is also very simple. Let us suppose that John Doe decides to publish in 1890 the genus *Bumblebeus*, and that he puts under this genus one hundred species, ninety-nine of which do not belong, for sundry reasons, with the species that makes one hundred. Jim Toe cannot throw out *Bumblebeus* whole—he *must* keep up this genus at least for one species, because this species is what botanists know as the type of the genus. In the same manner, the king of diamonds may be worth ten points in one game and fifty in the other. Mix the king in with fifty-one other cards and pull him out: it is worth ten or fifty, always and for ever. The king is the "type" of so many points in the score, regardless of how badly mixed up he may be within the deck during the play.

All these principles are plain, common sense, and everybody understands why they *must* be upheld. It is but fair that an older name should be kept up when it moves from one place to another in the same rank, because this name tells the story at a glance always showing its source. In the same manner, if older good names could be displaced by later ones, there would be no end to changes and a bedlam of names would result. Third, if names could be thrown out because they belong to "mixed up" groups, thousands of older names would be worthless today because what early authors took for a single species we often treat as a genus. Then, a name is always the "type" of something even as a card has always a value of some sort in reckoning the score of a game.

Let us see now whether *Stenocactus* or *Echinofossulocactus* is the correct name.

Berger puts a footnote under his treatment of *Stenocactus* (Kakteen, 244. 1929) bitterly to de-

nounce Britton Rose for having "dug out" the "unsuitable" name *Echinofossulocactus* Lawrence, which Berger believes covers many plants that have nothing to do with *Stenocactus*. "Spegazzini," says Berger, "has proposed the name *Brittonrosea*, but," Berger concludes, "there is no justification for throwing out the good old name *Stenocactus*."

There is not a statement in Berger's note that is justified. Schumann published *Stenocactus* in 1898 as a good subgenus, and this name must be maintained by everyone who believes that this group of plants is a subgenus. Berger does believe so, as he treats it as *Echinocereus* subgenus *Stenocactus*, which is proper. But—and this is a very large but—Britton & Rose never believed that this very same group was a subgenus. They believed it was a step up in the ladder, a full fledged genus. Thus, when they found that Lawrence had published in 1841 a good genus for this group, calling it *Echinofossulocactus*, they had absolutely no choice under the Rules (Art. 16, Art. 60 [1]) but to take up Lawrence's name. The plain fact is that *Stenocactus* is good as a subgenus in the very same manner that *Echinofossulocactus* is good as a genus: a good dog is a good dog and a good canary is a good canary but he who likes to have a good dog does not buy a good canary. I have carefully checked what Lawrence said, and what Britton & Rose did, and I do not believe it necessary to indulge here in technicalities when I have already made the fundamental point at issue clear beyond doubt. If Spegazzini has indeed proposed *Brittonrosea* (which I have not verified) in order to "rectify" what he took to be an error of Britton & Rose, Spegazzini is wrong and that settles the issue. I should like to add that it is not true to the facts that Lawrence's *Echinofossulocactus* is a bad mixture, because Lawrence placed under this genus *Echinocactus coptonogonus* Lem., which is the "type" chosen by Britton & Rose, and a species which Schumann himself agreed cannot be taken out of this group. Lawrence, moreover, recognized correctly at least six species of

this group. This is five more than he needed to recognize, and I must put in a good word, too, for Lawrence: this honest gardener was conversant with the best classification of his day. I was surprised, I must confess, when I carefully read what he wrote.

The compilers of the Index Kewensis fall into the error of believing that Berger himself used *Stenocactus* as a genus, and list under this name the reference "Kakteen, 244 (1929)." Berger never did this. His treatment leaves much to be desired in point of form, as usual, but he clearly refers to *Stenocactus* as an "Untergattung" (Subgenus) (Kakt., viii. 1929), not only, but states (op. cit., 249): "Weitere Arten der *Stenocactus* sind: *E. grandicornis* Lem. (1839), *E. tricuspidatus* Scheidw. (1841) . . . *E. lancifer* Dietr. (1839) usw." The abbreviation *E.* certainly stands for *Echinocactus*, and not for *Stenocactus*. Last but not least, had Berger actually used *Stenocactus* in 1929 as a genus he would have violated the Rules (Art. 16, Art. 60 [1]), because there already was a genus validly published for these plants in 1841, *Echinofossulocactus* Lawrence. Berger's confused handling of these genera and subgenera, his pointless comments and the consequent mistake that has crept into the Index Kewensis are good illustrations of how cacti must not be named. Those who are unable or unwilling to play cards correctly should not sit blithely at the bridge table but ought to seek knowledge, realizing that it is not humiliation to confess one's ignorance frankly and to learn before starting to spoil the joy and the work of others.

In conclusion: those who believe that these plants are worthy of being recognized as a genus must—and this is final—call them *Echinofossulocactus*, and cannot call them *Stenocactus* if they care to keep out of synonymy. Those who, on the contrary, treat them as a subgenus are in the right in calling them *Echinocactus* subgenus *Stenocactus*. In a deck of cards a king is not a queen, and in the books of botany a genus is not a subgenus.

Notes on Haworthias

By J. R. BROWN

Haworthia Reinwardtii Haw. var. *minor* Bak.
in Journ. Linn. Soc. XVIII (1880) 202;
Berger in Pflanzenr. IV. 38 (1908) 84.

Plant with densely leaved stems, 14 cm. or more tall, 2.5-3 cm. in diam. and proliferous from the base.

Leaves 2-3 cm. long, 8-10 mm. wide towards the base, ovate-lanceolate, erect, incurving to-

wards the somewhat pungent tips, face smooth but usually with a median line which bears a few tubercles or sometimes only with a few scattered tubercles, back with lightly raised lengthwise rows of white tubercles, the rows usually about 10 towards the lower part of the leaf, but sometimes more, 12 or 13, the tubercles also in transverse rows, keeled in the upper part.

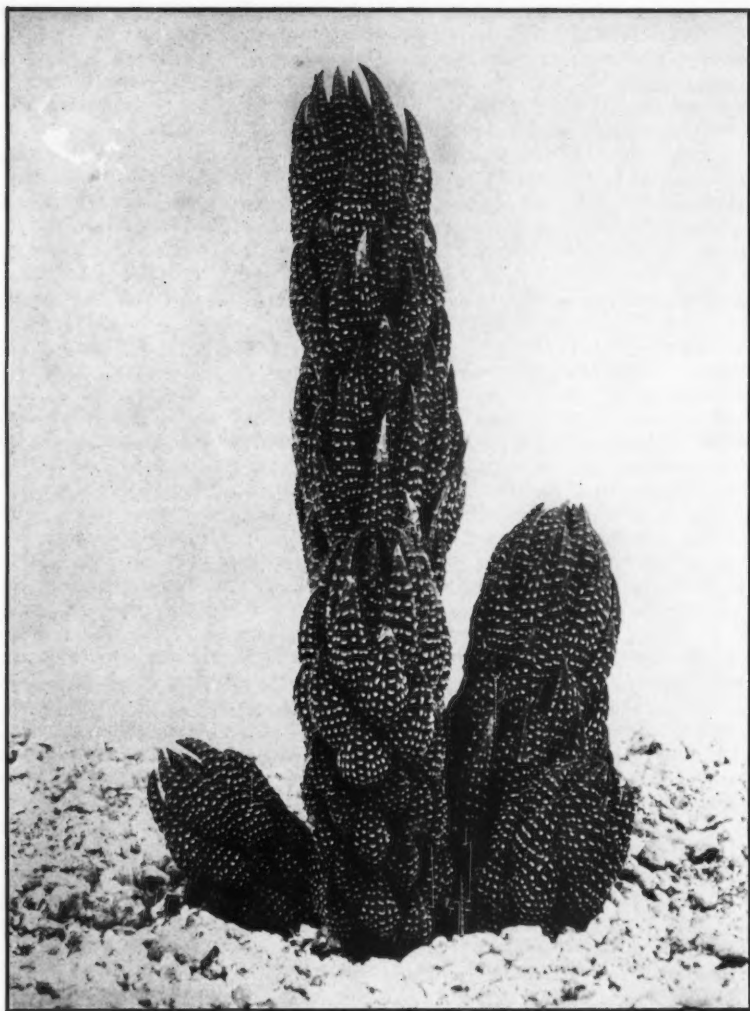


FIG. 42. *Haworthia Reinwardtii* Haw. var. *minor* Bak. nat. size.

Locality: Unknown.

Haworthia Reinwardtii and its numerous forms are very attractive plants due to their habit and the pattern of white tubercles on the leaves. While the locality of this *Haworthia* is unknown, there is a small form received from the vicinity of Grahamstown which may be identical, however, at the present time the leaves are shorter and slightly wider but it shows a tendency to

gradually assume, after many years under cultivation, the appearance of the plant illustrated here which was received from Europe many years ago, and which is almost a duplicate of the type on a smaller scale.

The plant shown in the illustration of this *Haworthia* was growing outdoors when the photo. was taken during its dormant stage. In the sun the leaves assume a brownish or often a reddish-brown color.

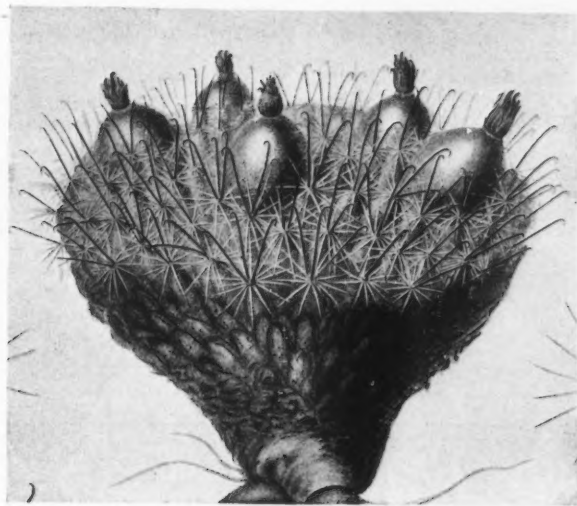


FIG. 43. *Mammillaria Wrightii* of Engelmann and reprinted from Britton and Rose.

Mammillaria Wrightii

By W. TAYLOR MARSHALL

When Dr. Engelmann described *Mammillaria Wrightii* in 1856, he also published an engraving (U. S. and Mexico Boundary Survey, Plate 8, figs. 1 to 8) showing an excellent likeness of the plant with its exaggerated fruit and a portion of that plate was reproduced in "The Cactaceae" on page 153 of Volume IV. This cut we reproduce here.

Since the original publication, *M. Wrightii* has rarely been found although many collectors have searched for it. Cleve Hallenbeck found a plant that he thought was *M. Wrightii* and an account of his find, with illustrations, appeared in this JOURNAL (Vol. IV, pg. 23).

Since 1934 the same plant has been frequently found in New Mexico and I have specimens of it collected by Dr. H. V. Halladay and by Mrs. Eunice Bullington. These specimens, as well as the ones reported by Mr. Hallenbeck in 1934, are definitely *M. Wilcoxii*, which had always been considered as a strictly Arizona species.

Hallenbeck collected one mature plant and about 50 seedlings and although his photograph shows plants so lightly spined that the tubercles can be seen, this is true only because the plants were seedlings and had grown in partial shade and had been re-established in cultivation before they were photographed.

It was perfectly natural for all of these collectors to presume that the plant they found at the type locality of *M. Wrightii* was that species and they all recognized that it did not agree with the published description nor with Engelmann's illustration but felt that the illustration was "very inaccurate."

The true *M. Wrightii*, however, conforms to this "very inaccurate" illustration and to Engelmann's description. The specimen I have was sent to me by Mrs. Bullington who collected it in New Mexico.

In his original description Engelmann mentions that the flower of *M. Wrightii* is lateral, and the fruit is moved more outward by the continuous growth of the plant. He also mentions that the fruit is almost an inch long (2.5 cm.). From the photograph appended you will note the position of the inch long fruit at the extreme edge of the plant.

Almost all recent writers have concluded that *M. Wrightii* and *M. Wilcoxii* were identical, this opinion was based on the material offered under the name of *M. Wrightii*, but the discovery of this plant by Mrs. Bullington, makes it certain that the plants are distinct. Comparative descriptions of the two species are here presented:

M. Wrightii

Shape: Depressed globose above, tapering below, simple, tubercles and plant body visible.

Size: 5 cm. high, 7.5 cm. in diameter.

Tubercles: 2 cm. or longer, terete.

Color: Dark, shining green.

Areoles: Round, 3 mm., bearing white felt.

Radials: 14 to 15, heavy acicular, radiating, to 1.5 cm. long, white with brown tips, the brown extending half way down on the upper ones.

Centrals: 2 to 4, mostly 3, 2 or 3 of which are hooked, black.

Flowers: 2.5 cm. long and broad, pink to purple, outer perianth segments triangular, obtuse, fimbriate.

Fruit: 2.5 cm. long, 2 cm. in diameter, top-shaped, purple, juicy.

M. Wilcoxii

Globose to cylindric, simple or cespitose, hidden by spines.

2 to 9 cm. high, 5 to 15 cm. in diameter.

1 to 1.5 cm. long, terete to laterally flattened.

Nascent tubercles dark green, becoming glaucous, gray-green.

Oval, 2 mm., bearing white to yellow wool.

11 to 18 of which 3 to 4 are directed downward, 1 to 3 upward but majority are lateral, 1.5 to 2.2 cm. long, setose, white to light brown becoming horn-colored in age.

2 to 5, mostly 3, 2 to 5 of which are hooked, dark brown with white bases.

2.5 to 3 cm. long and 2.5 to 4 cm. wide, pink to purple, outer perianth segments broadly linear, acute.

1 to 1.5 cm. long, 1 cm. in diameter, oval, dirty purple, juicy.



FIG. 44



FIG. 45

(LEFT) *M. Wrightii* was received from Mrs. Bullington and the *M. Wilcoxii* (RIGHT) was received from Dr. Halladay, who sent it as *M. Wrightii*. This particular plant is less densely spined than the usual *M. Wilcoxii*, but the color and smaller size of the tubercles and the color and relatively small fruit leave no doubt as to its identity. Dr. H. V. Halladay and Miss Jaden also collected a few specimens of the true *M. Wrightii* along with many specimens of *M. Wilcoxii*. It is extremely probable that the cristate form he describes may be *M. Wrightii*.

W. T. M.

MAMMILLARIA WRIGHTII

By DR. H. V. HALLADAY and GERALDINE JADEN

It was quite by chance that the authors decided in the fall of 1940 to settle in Las Cruces, New Mexico, to do some writing and resting. It was also accidental that we found several specimens of cacti that were classified by Ladislaus Cutak as *Mammillaria Wrightii*. Soon after getting our records in usable files we started a survey of the cacti in the Organ Mountains and while checking a rather difficult area in October, we found three of the *Mammillarias* that were new to us.

Searching through the records we missed the brief reference to the root which in every specimen was top-shaped or tapering deeply from the part of the plant above ground. The fruit, present in October, was large and purple and looked

more like the seed pod of a *Coryphantha* than a *Mammillaria*. During the winter and spring, diligent search was extended from Pyramid Peak on the south to Pope's Canyon on the north and about fifty specimens were collected together with one cristate form. The plants ranged in size from $\frac{3}{8}$ inch in diameter to the largest which was 5 inches in diameter and 6 inches high. This large plant bloomed in July and at one time supported 22 blossoms forming a circle at the top of the plant. During our searches we found no "nests" of plants but scattered and in unusual locations. Altitude ranged from 4500 to 6000 feet and mostly on the flats at the base of the mountains with southwest exposure. A few

specimens have been found on the eastern slope of the Organs. Plants found out in the open in full sunshine were more heavily spined, more compact, and not projecting much above the ground level. Those secured from beneath shrubs or shaded by grasses were more like the usual type of *Coryphantha* and with fewer spines. All of these, when transplanted into the garden and grown under full sun, had identical flowers.

Following through we noted the first buds on April 15 and the first full flowers July 2. The last flowers appeared the first week in August. The seed pods developed rapidly and were large and green by the first of October, but soon afterward turned purple. By the first of December the plants had shriveled so that they appeared to be a mass of closely cropped dried grass.

This plant is rare. They are difficult to find at any season and have been reported from only a few places in the state. Wooton says they were found "farther north in the state or at the extreme western edge." Specimens have been found near Santa Fe and Anton Chico. No mention is made of this cactus in Helia Bravo's book on Mexican cacti. It is certainly related to *M. Wilcoxii* and *M. viridiflora* which was described in "Cacti of Arizona" January 1, 1940, Bulletin of University of Arizona. Cutak's article in the November, 1936, issue of Missouri Botanical Garden Bulletin describes in detail the plants we have found, even to the tubercles "faintly sprinkled with silver dust."

While on a hunt for *M. Wrightii* at the base of the Organ Mountains near Las Cruces we found this freak form evidently out of its usual territory at about 4800 ft. in upper Sonoran Zone on the slopes of the Organ Mountains. It was growing on the west side of a *Multa Spinae* bush and concealed by grasses. About



FIG. 46

ten inches long, six inches wide, and six inches high. Root system: branching type, smooth and light brown in color. Tubercles: small, $\frac{3}{8}$ inch by $\frac{1}{8}$ inch, not grooved and no wool. Sap: clear, not milky. Spines: Centrals—one or occasionally absent. Brown, often hooked, some straight and others bent but not hooked. Radial—10 to 16, white and flexible evenly distributed. All spines are hairy under a glass and from $\frac{3}{8}$ to $\frac{1}{2}$ inch long. Flower or seed pods—None found and no evidence of any scars. (See photo above.)

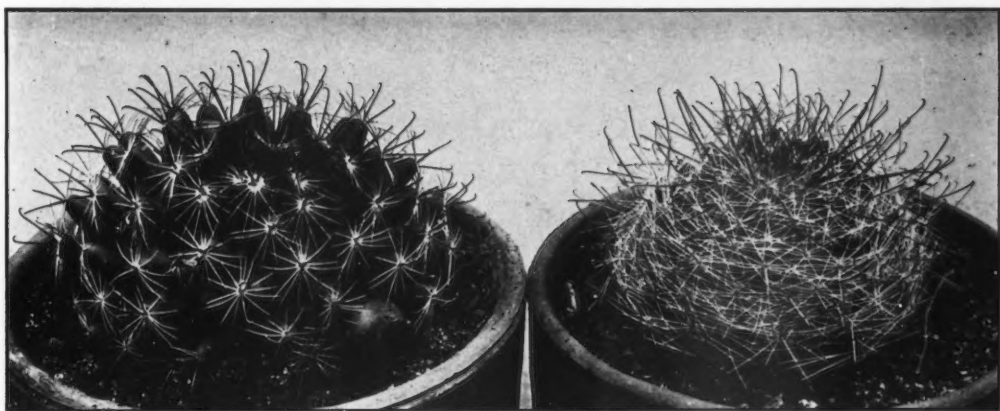


FIG. 47. LEFT: *Mammillaria Wrightii*. RIGHT: *M. Wilcoxii* collected by Mrs. Bullington of Deming, New Mexico. Both plants approx. half size. Photos by Graham Heid in "Cactaceae" by Marshall and Bock.

A late flood, while we were away from our garden, proved too much for all but 8 specimens proving that they must have better drainage than the spot we had selected for them. Our difficult job now is to spend hours searching for more of these rare plants.

The cristate proved the irregularity of such growths for the centrals were not regular in number or form and the radials were pubescent. These features were noted on the seedling found

and also recorded by Cutak in his article where he mentions the spines developed on a growth due to etiolation.

There are two very good reasons for this plant being rare. We found many dead plants and discovered in each case, and in some plants that were still alive, a large white grub that had eaten out the heart of the plant. Searching in the spring, we found several that had been partly destroyed by rabbits and since the area was a grazing region some had been injured by cattle.



FIG. 48

Sedum platyphyllum sp. nov. Plant on the left is $\frac{1}{8}$ natural size. Plant on right is $\frac{1}{4}$ natural size.

A New Mexican Sedum

By E. J. ALEXANDER

New York Botanical Garden

Among the cuttings of succulents brought back from southern Mexico by Mr. T. MacDougall in 1939 was an unusual-looking plant that resembled a *Cotyledon* more than it did any known Mexican plant, but of course the alternate leaves indicated either *Sedum* or *Echeveria*. The first flowering in December, 1939, proved the plant a *Sedum*. Since that time the writer

has been checking carefully through the genus *Sedum* in order to make certain it was not a species already described. The most likely species at first appeared to be *S. Botterii*, but the size and color of the leaves and the stiffer, erect inflorescence were not a satisfactory match. Nevertheless the plant was tentatively called *S. Botterii* while the search continued. Flowering has taken



FIG. 49. *Sedum platyphyllum* sp. nov. About natural size.

place each succeeding winter, and it may now be definitely stated that a new species is indicated, closely related to *S. allantoides* Rose.

***Sedum Platyphyllum* Alexander, sp. nov.**

Planta frutex succulentissima, in partibus omnibus glabra et glauca; caulibus usque 1 cm. crassibus; foliis alternis, usque 7.5 cm. longis et 5 cm. latis, orbiculobovatis, apicibus rotundatis, minute mucronatis, ad basi late cuneatis; inflorescentia paniculata centripetalia, usque 3 dm. longa; floribus subviridi-albis, sepalis 5-6 mm. longis, anguste lanceolatis, acutis, extus pruinosis; petalis 8-9 mm. longis, lanceolatis, acutis, ad apices rubro-maculatis; staminibus 7 mm.

longis; carpellis albis, anguste ellipsoideis, 5 mm. longis; stylis 2 mm. longis; squamis cuneatis, 1.5 mm. longis, 1 mm. latis, concavis, apice truncatis.

A highly succulent, glabrous and glaucous shrub, the branches up to 1.5 dm. tall. Stem and leaves pale yellow-green and so very glaucous as to appear bluish. Leaves alternate, spreading-upcurved, up to 7.5 cm. long and 5 cm. wide, 5 mm. thick, the blade strongly flattened, orbicular-obovate, rounded at the apex, with a minute blunt mucro, tapering cuneately into a pseudopetiole base, not spurred at the half-clasping

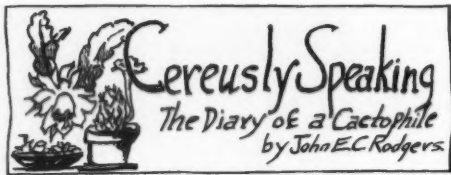
attachment point. Inflorescence terminal, a centripetally flowering panicle up to 3 dm. long, the lower bracts obovate, up to 7 mm. thick and 2.5-3 cm. long, the upper margin and upper surface with minute red spots. Inflorescence-rachis and branches heavily red-streaked and very glaucous. Sepals spreading, 5-6 mm. long, linear-lanceolate, acute, the outer face pruinose. Petals 8-9 mm. long, free to the base, lanceolate, acute, tapering abruptly into a broad claw at the base, greenish-white, the inner sides and face towards the apex red-blotched, midrib green outside, produced into a prominent apiculus. Filaments slender-subulate, 7 mm. long, the epipetalous ones inserted 1.25 mm. above the base; anthers brown-red. Group of carpels 3 mm. in diameter; carpels white, 5 mm. long, 1 mm. wide, narrowly ellipsoid, tapering into slender spreading styles 2 mm. long; nectarine glands cuneate, 1.5 mm. long, 1 mm. wide at apex, concave, truncate, greenish-cream.

TYPE collected on the summit of Guengola, altitude 3500 ft., near Tehuantepec, Oaxaca, Mexico, in the winter of 1938-39, and flowered at the New York Botanical Garden in 1939-40, 1940-41, and 1941-42. Specimen deposited in the New York Botanical Garden Herbarium.

Sedum Botterii with which this plant might be confused has less rotund, green leaves only up to 4.5 cm. long, the inflorescence is a centrifugally flowering panicle, the carpels are broader and more turgid, and the nectarine glands are smaller and more darkly colored. The corolla appears in dried specimens to have been greenish-yellow or green, the petals reflexed and not narrowed towards the base.

Special attention is called to the peculiar type of inflorescence possessed by *S. platyphyllum* and *S. allantoides*. While it is paniculate, it will be noted that the order of flowering appears to be centripetal, although falsely so, rather than the common, clearly centrifugal order of most *Crassulaceae*. To explain in more detail, the order of flowering is from the apex of the panicle and each of its branches and branchlets downward to the central axis, while in the usual form of inflorescence in *Sedum* the order of flowering is from the base of each branch and branchlet upward to the tip. These two species appear to stand alone in the genus because of their inflorescence and their narrow-based, red-blotched petals. A new section in the genus is here proposed to take care of them:

Sect. CENTRIPETALIA, sect. nov. Species in hoc sectione different ab omnibus speciebus *Sedum* inflorescentia paniculata centripetalia. Species adhuc cognitae 2, *S. allantoides* Rose et *S. platyphyllum* Alexander.



PART V

May in Ohio

May 2. One of my many visits to Henry Poth's, Mansfield, Ohio, collection was made this day five years ago, according to my diary. Poth is the youngest gentleman of 70 years I know. His hair is as white as the "Old Man Cactus." His fine greenhouse is filled with large specimen plants. "Bought them big so I would be sure to see them bloom," he explains. Now that he has enjoyed the blooms, he is as interested in raising seedlings. By May 1, I note that he always has his greenhouse whitewashed to protect his plants from sunburn, and that many of his cacti and exotic plants are placed under fruit trees for the summer. He gave me a seedling of *Euphorbia splendens* on this trip and cuttings of *Pereskiaopsis diguettii* and *Lepismium cruciforme*. All have grown nicely and are still in my collection.

May 3. Since 1940 I have been trying to identify one of my grafted plants. It is an off-setting cactus, dark-green-purple, almost black in color, with 14-18 ribs. Spines are medium brown, 8-14, closely set on low sharp ribs. Sold to me as *Malacocarpus "nigra."* Has a bud of black wool on last year's growth which swirls into a ruff effect above bud. Searched "B. & R." when I first got it and now "Marshall and Bock" without avail. *Opuntia maxima* is budded. *Gymnocylindrium platense* flowered today for the second time this spring.

May 5. *Rebutia Kupperiana* ready to flower. Never got used to finding buds at base of my plants. *O. retrorsa*, that ungainly plant with the purplish-drip effect at each spine base, almost "extincted" itself before I discovered it among some other *Opuntia*. Two joints left. Well, it grows rapidly enough, but the joints detach themselves too easily to make it a good greenhouse plant.

May 6. Last year I exhibited my drawings at Clyde, Ohio. They had been on display at the Cleveland Garden Center the month before. One of the teachers in Clyde had seen them and thought they would add interest in an art exhibit in their town. Ted Rogers, my 1923 college room mate is a teacher there, too. He displayed his very nice collection of succulents and one of the red flowered *Epiphyllums* that had 50 or 60 blooms at that time. Those flowers proved my pictures weren't just a mad artist's fancy, so the art exhibit turned out to be a nice cactus show, really.

May 7. My *Gasterias* are developing seed capsules. *Acanthocereus pentagonus* and *A. inermis* have new growth at ends of plants, as well as from underground. *Echinopsis albiflora*, as we call it here in these parts, bloomed again. I acquired my first plant, a five-headed one from a neighbor in 1933. She told me her father in Columbus, Ohio, raised them in charcoal, sand, and loam mixture and often had a hundred blooms a week. Wintered them in his basement. It never fails to bloom for me. I care not if it be a hybrid or true specimen. It is robust, disease resisting, and free flowering. I like it.

May 9. Do I have a freak plant? My "*Thelocactus bicolor*" has 6 one-inch pups near the base. Br. & R.

says it is simple, not caespitose . . . *Echinocereus viridiflorus* has finished its spring blooming for this year. In 1936 I met with Earl V. Newton, manager of the horticulture exhibits at the Great Lakes Exposition. We discussed plans for a possible cactus exhibit. In 1938 I illustrated a talk at Brookside PTA with seedlings and specimen plants. There were 135 there and they asked me questions for an hour. Was I surprised. No one claimed he had one I didn't—one with a spine at the end of a leaf, etc. Helen Day King, one of the teachers, who asked me to talk, proved a good advance agent. See that a single joint of *Opuntia* (brachyarthra) *fragilis* survived in rockery. There are some cacti that seem to be "going, going"—I save a pad, and it grows awhile—then it is "going, going" again until I give up and let it be "gone."

May 14. In 1934 my "Adam," *Cereus peruvianus* lost a rib and started to grow with only three. Today, it is quite tall, and still has three ribs. *Stapelia gigantea* had three 15-inch blooms in 1938 as early as this. The tips of this bloom are extremely prehensile and the full diameter of the bloom does not show to the best advantage. The *Stapelia nobilis* bloom, that old stand-by in most collections, is not half as spectacular. It is cup-shaped and smaller.

May 16. The 67 *Hamatocactus setispinus* seedlings which I transplanted a year ago have more than doubled in size. They have to go some to equal the one I saw on a porch in Mantua, Ohio, in 1936. It was over a foot high, with 18 offsets. Often boasted as many as 30 blooms. Mr. Chalker, the proud owner, had cacti stuck all over his place. One grand cactophile.

May 18. Today Mrs. Sam Triffetti and her daughter Ruth, two enthusiastic succulent window-gardeners, stopped to see the buds on *Selenicereus Macdonaldiae* that will bloom tonight. We were on our way to the Midwest meeting with E. J. Fish at Strongsville. His rock garden is one of the show places around here in the spring. Covers a half acre. Has most of the hardy succulents listed besides the usual alpines. Never has expressed a preference, but I should say he is a Sempervivum fan. I have two other Sempervivum collectors on my list: Carl Norberg, Lorain, Ohio, and Mr. Sanford, of Clyde, Ohio.

May 22. It may be priorities on other material for angle worms, but they are using my Sempervivums to keep the water out of their living quarters when it rains. I am kept busy resetting these small plants due to the whims of the worms.

May 23. Bud on *Heliocereus speciosus* now 3½ inches long. *Selenicereus coniflorus* has a bud 6 inches long. Some of us in the Great Lake regions find that our hardy opuntias winter nicely in pots in our garages. Last year, I left these formerly carefully guarded plants in a low bed all winter during which time we had 2½ inches excess rainfall. They all survived, and all have new stems and buds, which are well developed. (See March Column) I have recently added cuttings from Montana, Idaho, Wisconsin, and Minnesota. I won't dare take the same chance next year. Temperatures are too variable around here.

May 26. Today in 1936, was a big day for me as a cactus amateur. I received a notice that I had been selected chairman of the Cactus and Succulent Show for the Great Lakes Exposition. Tentative dates had been set for the latter part of July. When Mrs. Hendrik Naber, a friend, was in Holland a few years ago, she sent me exquisite colored prints of *Opuntia Bergeriana*. Found it listed in Curt Backeberg's catalogue, but not in the American ones. The flower is a brilliant red. Three blooms today on *O. Austrina* pads which Kenneth Kline brought me from Florida. (Hope he didn't pack them in his suit case, those spines are deadly.) The plant now has 8 pads.

May 28. *Opuntia subulata* has grown up. It was a

3-inch cutting when I got it from Walter Rutter, an Akron, Ohio, dealer, in 1934. Is now 3½ feet tall with 2 side arms. I don't know where it would be if I hadn't really starved it until last year. I gave it enriched soil and it has grown two feet since then.

May 31 Jottings From My Diary

1934. Sprayed cacti to add moisture and wash off dust. There is something about the smell of a greenhouse that gets me.

1935. At J. S. Clifford's greenhouse in Amherst for plants. He had several epiphyllums with very spiny stems, and a profusion of 3 to 4-inch orang-red flowers. Outside sepals curve around bud instead of the length of it. Raises fine succulents. Has two of the largest *Crassula arborescens* I have ever seen.

1936. Got three new varieties of Sempervivums from Mrs. Kenneth McKee, a neighbor who has a beautiful backyard and pool. Raises "Hens and Chickens," Sedums, a few hardy Opuntias, along with her ornamentals.

1937. It was 88 degrees today, just one degree short of 1895, record for this date.

1938. Started late spring inspection to see if pests have gotten ahead of me.

1939. Turned out pilot light on gas furnace. Usually budget for 10 months of heating in this region.

1940. Cleft grafted a two-inch piece of *Wilcoxia Poselgerii* on *Cereus Peruvianus* seedling. (It is 14 inches high now and has two branches. Hasn't bloomed yet.)

1941. *Bergeranthus Scapiger* and *Echeveria glauca* budded. *Cereus Peruvianus* specimen plant has grown 6 inches in last month. Found the *Gasteria* "stems" I split open when I potted them in sand have more offsets than those I didn't split.

(To be continued)

DENVER CACTUS AND SUCCULENT SOCIETY

Our club is small, 15 members, but we are active, we all enjoy our plants. We have a discussion each meeting night by some member. These topics were planned at our fall meeting when the new officers are elected. Some of our topics have been, "Care and Culture of Cacti," "History of Cacti," "Commercialization of Cacti," "Structure of Cacti," etc.

The growing season of cacti is so short here. I believe it makes us appreciate our plants more than you folks in California, where you can enjoy them the year around. We had a long, hard, cold winter here and April has been snowy, rainy and cold. Last Friday (April 24th) we had snow drifts 3 feet deep in our own yard, all the foothills and mountains received about 4 feet of snow, it all melted, then last night and today it has rained and snowed, so you see we can't set our plants out. My native *Pediocactus Simpsonii* is in bloom, the snow doesn't hurt them; the real dark pink ones are very pretty and attractive, showing through the snow.

Our officers are: President, Muriel Colburn; Vice-President, Mr. Harold Huligard; Secretary, Jack Barker; Treasurer, C. D. Hollingsworth.

Committees: Garden Center, Mrs. Julia Willis; Critic, Mrs. Kai Villien; Radio, Miss Frances White; Historian, Mrs. C. D. Hollingsworth; Librarian, Mrs. B. A. White.

With the tire and gasoline situation as is, our field trips will have to be curtailed, but there is always something to be thankful for, we will have more time to enjoy, study, and give our plants more care and attention.

Here's trusting you are enjoying good health and that the war won't effect our national organization too much. I receive the JOURNAL each month, couldn't do without it.

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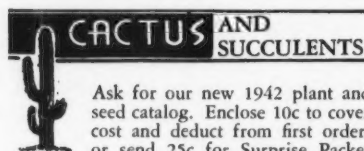
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mentioned in the copy. This installment printing be-
gins another series of reprints. Beiser's "Kakteen"
and Hosseus "Notas sobre Cactaceas Argentinas" have
both been translated and are ready for printing.

We do not attempt to edit the names of plants appearing in the advertisements.

